no 10
PENNA. STATE LIBRARY

Commonwealth of Pennsylvania

DEPARTMENT OF FISHERIES

BULLETIN No. 10

What an Acre of Water Will Do

FISH RAISING BY THE FARMER

N. R. BULLER
Commissioner of Fisheries
Harrisburg, Pa.

Issued January, 1914

HARRISBURG, PA.:
WM. STANLEY RAY, STATE PRINTER
1914

P 33.31

Digitized by the Internet Archive
in 2016

https://archive.org/details/whatacreofwaterw00bull

Commonwealth of Pennsylvania

DEPARTMENT OF FISHERIES

BULLETIN No. 10

What an Acre of Water Will Do

FISH RAISING BY THE FARMER

N. R. BULLER
Commissioner of Fisheries
Harrisburg, Pa.

Issued January, 1914

HARRISBURG, PA.:
WM. STANLEY RAY, STATE PRINTER
1914

VIRTUE
LIBERTY AND
INDEPENDENCE

DEPARTMENT OF FISHERIES

COMMISSIONER OF FISHERIES.

N. R. Buller.

FISHERY COMMISSION.

John Hamberger, Erie,

Henry C. Cox, Wellsboro,

John C. Ogden, Johnstown,

W. A. Leisenring, Mauch Chunk.

WHAT AN ACRE OF WATER WILL DO.

The possibilities of small areas of water for creating a food supply are little appreciated by the average farmer. There are few farms in the Commonwealth which have not a waste spot on them that with very little expense could be converted into a pond which would serve as a breeding place for enough fish to furnish the family with a very considerable food supply and have some to sell. Or, several farmers might join together and build a larger pond which would serve to furnish them all with fish. The only requisite would be a supply of water sufficiently strong to prevent the pond from stagnating, and this supply need not necessarily be very large. When the pond is established it could be stocked with fish, preferably bluegills and catfish, both fish of the greatest fecundity and fine table fish, while the bluegill has a gameness that makes his taking sport, even for the most expert angler. With these fish should be placed in the pond a number of minnows and then the question of food supply for the fish is settled.

Here then is a waste spot turned into a productive one and the feeding of the product requires no further outlay than the original investment. The question of food supply is one that is attracting more attention almost than any other, and experts and theorists are devoting columns of language to explain how the problem can be solved so that food will be cheaper to the man of small means. It is in aid to this solution that the Department of Fisheries of Pennsylvania calls the attention of the farmers to the possibilities of the fish pond. Very few persons realize how much can be done with an acre of water in the way of producing fish, but the reason for this is that they do not know the productiveness of the two fish mentioned—bluegills and catfish. The small or no cost for their maintenance and how taking a supply of fish for a meal may be reduced to a sport seductive to the small boy of the family who hates to chop wood and really a delight to the mother and daughter of the household. The pond need not be much deeper than to hold sufficient water that will not freeze to the bottom in winter time, but, of course, a depth from five to eight feet would be an advantage.

There is nothing adds to the charm of a landscape more than a glimpse of water, and the fish pond may thus become an attractive spot to the farm as well as a utilitarian measure. When Bayard Taylor erected his home at Cedarcroft near Kennett Square, Chester county, his artistic soul missed the absence of water, that section of

the country being rather high and dry and devoid of considerable water courses. At some distance from the house the poet dug a small pond which fed from a spring and then cut a vista through the woods which gave the sitter on the porch of the house a glimpse of the water, and it was wonderful what a touch of beauty that waterscape gave. It is not often in this work-a-day world that the beautiful and the utilitarian are united, but here the farmer has a chance to unite them.

The pond should be planted with aquatic plants that will make it a thing of beauty and at the same time furnish food for the finny dwellers in the water, because it is the aquatic life that grows upon the plants that furnish the nourishment for the small fish, and experience has shown that the number of fish that will thrive in a body of water is exactly proportionate to the amount of food that is there for the support of the little ones. Around the pond should be planted shrubbery which will also add to the food producing species for the fish, because insects will harbor on the bushes and their larvae and even eggs and themselves drop into the water.

The excavation of a pond need not be an expensive thing and once constructed the cost of maintenance is really nothing, while as remarked above, the food supply will take care of itself. The best fish for such ponds are the bluegill and the catfish. The best variety of catfish is the common bull-head indigenous to the waters of Pennsylvania. It grows in length a foot to 18 inches, and weighs from one to two pounds, though sometimes running up to five and six pounds. "The horn pout or common bull-head," says Thoreau, the Naturalist, "are dull and blundering fellows, fond of the mud and growing best in weedy ponds and rivers without current. They stay near the bottom moving slowly about with their barbels widely spread watching for anything edible. They will taken any kind of bait, from an angle worm to a piece of tomato can, without hesitation or coquetry, and they seldom fail to swallow the hook. They are very tenacious of life, opening and shutting their mouths for half an hour after their heads have been taken off. They spawn in the spring and the old fishes lead the young in great schools near the shore, caring for them as a hen cares for her chickens, a blood thirsty and bullying set of rangers, with ever a lance at rest, and ready to do do battle with their nearest neighbor."

As an edible fish the catfish takes front rank in the minds of many people. A number of years ago there was a famous resort near Philadelphia on the Wissahickon where a visitor was escorted by the native that he might enjoy the pleasures of catfish and waffles whose praises were sung as being rivals to the ambrosia and nectar of gods on Olympus. One of the most enthusiastic trout fishermen in Pennsylvania once remarked: "Did you ever eat a catfish from a trout

stream? I have, and I want to say when I catch a catfish when fishing for trout that fish goes into the creel to be kept for my personal breakfast. There is simply no fish his equal."

There are few people who do not know the edible qualities of the catfish, but their tastes have been somewhat spoiled from the fact that so many catfish on the market come from undesirable waters, and therefore are not the best specimens on which to gauge a taste. The catfish from the ponds of the farmer would be a fair rival to the famed fish on the Wissahickon, or the catfish from the trout stream. In addition to furnishing food and sport the fish pond would give the children of the farmer an opportunity to study fish lore, and given an opportunity there is no doubt the children would take it, as the study is a fascinating one. The catfish herds its young in a round ball and moves them much as the herders in the west move the herds of cattle by the process of rounding them up.

The bluegill is thus described by Jordan and Evermann in "American Food and Game Fishes:"

"The bluegill is perhaps the best known and certainly the most important of all our true sunfishes. It is found throughout the Great Lakes and in the Mississippi Valley, from Western New York and Pennsylvania to Iowa and Missouri, and from Minnesota to Florida and the Rio Grande. It is one of our most valuable and widely distributed species and is found in all lakes, ponds and quiet streams throughout its range. Though found in quiet streams it is above all the sunfish of the lakes, and whether large or small is decidedly more abundant in the smaller ones.

"The bluegill is the largest of the sunfishes. It reaches a length of 12 to 14 inches and a weight of nearly a pound with a maximum weight of about a pound and a half.

"As a food fish the bluegill is of much importance and of all the species it is the one most often sent to market where it always brings a good price. As a pan fish it is excelled among fresh water fishes only by the yellow perch. Its flesh is firm and flaky and posseses a delicious flavor, and among all the sunfishes it holds the highest rank as a game fish. It can be taken at any time of the year even through the ice in winter. It bites well during the spring and early summer, while very early July until September it is particularly voracious and fine catches can be made. It will take any sort of bait and it can be taken with any sort of tackle. Angle worms are probably the best bait, either in still fishing or trolling, but grasshoppers are also excellent. White grubs, small minnows, small pieces of fish or mussel are good, and they can be taken on the artificial fly or small trolling spoon. The bluegills usually keep in more or less definite schools and the patient angler can usually land them all. They do not seize the hook with a rush as does the rock bass, but

quietly sink it in and the fight does not begin until the fish finds that it is hooked, but from then on the fight is of the most vigorous kind and is kept up to the end with a persistence and viciousness that makes the bluegill 'the gamest of all fishes for its size.' "

Certainly it is a very tempting picture to a man who appreciates good living and enjoys fun in getting it rather than hard work. Here is a fish that is described as next to the daintiest of fresh water fishes as food, and the gamiest of all fishes of its size. How much more delightful on a hot day would it be to go down to the fish pond and inveigle out a mess of bluegills for supper than to chase around in the hot sun a light footed rooster which objected to having his head cut off.

The Department of Fisheries has grown up from small beginnings when it was first found that artificial propagation was the way to keep up the supply of fish. The waste ordinarily from propagation naturally is very large on account of the numerous enemies that have to be considered, but many of these enemies are eliminated in the ponds so that the natural processes ought to keep the ponds stocked, but this can be supplemented annually by new blood obtained through the Department of Fisheries.

While probably the most talked of work of the Department of Fisheries is the propagation of the game fishes, such as trout and bass, this is really but a small end of its work. Food fish are the most valuable kind, being propagated for Lake Erie by the hundred million annually, and the Department today is striving in every way to stock the streams with the food fishes indigenous to them, and is now striving to induce every farmer in the Commonwealth to add to his resources by building a fish pond and stocking it with the fish described in this paper. The Department stands ready to render every assistance to the pond builder in the way of advice and the procuring of stock fish, and the Department is satisfied that if one man in a neighborhood will take the matter up practically that it will not be long until he will convince all his neighbors that a fish pond is not only a proper adjunct to the farm in the way of furnishing a food supply, but a source of continual amusement to the whole family, especially the women and children, in the way of alluring sport and an additional beautifier to the already wonderful landscape of Pennsylvania.

Some twenty or more years ago the United States Government authorities introduced into the United States the German carp, it being induced to do so by the fact of its enormous prolificness, and the fact that it is the main source of fish supply in parts of Europe. They did not reckon with the fact that the carp is an inferior fish to many species of the American finny tribe and that it introduced a fish to upset the balance which nature established. Fish are mostly

cannibals and one species preys upon another, but under the laws of nature they balance and an equilibrium has been maintained. The carp brought in is a vegetable feeder that preys upon the roots of plants and destroys therefore the vegetation which furnishes the breeding places for much of the food of the other species of fish, and at the same time is a spawn eater. Its introduction is a mistake, but it is here to stay. Captivated by the stories of its fecundity and the probable wealth to be acquired in growing them, numbers of fish ponds were started and stocked with carp. The experiment proved a failure because in small ponds and warm water the carp proved a fish that few people wanted, its flesh being coarse and to a certain extent tasteless. Thus the carp raising proved a financial failure and there are few, if any, carp ponds now left in the State. The carp escaped to the rivers and lakes and have increased enormously, but in purer and colder water the flesh is better than that of the fish grown in the smaller ponds.

In the case of the American fish spoken of above, their flesh is not affected in the way that the carp was, and therefore the grower of them is alway sure of a dainty meal.

It is difficult to make an estimate as to the cost of a pond but on most farms there is a low lying spot with a tendency to swamp other land which if an embankment could be raised would make the necessary pool. Both the bluegills and the catfish are warm water fishes and will thrive no matter how warm the water gets in the summer time, and will even stand a certain amount of stagnation. They are thus eminently fitted to meet the requirements and really will thrive in the same water that the carp would, while at the same time they do not lose their flavor for the table.

No boy needs to be told how to catch a catfish, and after one cast of the line any girl is a devoted angler for sunfish, and the command of the children to go and catch a mess of fish will be greeted with smiles where sour looks would be returned on an order to do some other kind of farm work.

Fish diet is commended as one of the best and many dietarians point to the hardy dwellers along the seashore as examples of a race that grow up on a fish diet.

When the Department has completed all its plans for perfecting its hatcheries the limits of its capacity to furnish fish for restocking the waters of Pennsylvania will only be limited by the demand, and if all the waste spots on the various farms should be turned into fish ponds, there is no question that the problem of a cheap food supply will be very near to solution.

A pond of the size of an acre ought with attention produce from 5,000 to 6,000 pounds of fish a year, and this with no expenditure for food. If, however, artificial food should be used, of course, more

fish can be taken out of the pond. Five thousand pounds of fish at ten cents a pound is $500.00, and there are not many acres in Pennsylvania which are returning that revenue to the farmer. Like every other procedure it is under the primeval curse and the man who has a fish pond must give it at least some time and attention. Musk rats come and attack the banks of the ponds, and possibly allow all the water to run away at an unexpected time, meaning the loss of all or many of the fish. Cray fish will also attack the banks and do much damage but all these drawbacks are small compared to the yield that the farmer will get.

The best way to stock a pond is to procure about 200 adult fish and then the fish will proceed to increase and multiply in marvelous jumps until the farmer is sure of the thousands of pounds of fish which not only means a very desirable revenue, but at the same time the taking of fish affords sport, and the farmer's family has a pleasant change of diet in the fish. As remarked above, the farmer's children are apt to sidle away from hard work, if it is possible, but it is doubtful whether there is a boy or girl who having once tasted the pleasures of fishing, would not want to spend as much time fishing as possibly could be allowed them.

The Department of Fisheries, as remarked before, stands ready to co-operate with the farmers in stocking the ponds, and will be glad at any time to furnish all the information it has upon the proper way to construct a pond. It will be seen that the business requires very little outlay of money and when it is in running order the yield of fish will be a surprise.

While, as said above, the fish pond can be made a source of profit and pleasure at no expense, or very little, for maintenance, yet growing the fish is like growing everything else on the farm, there must be constant vigilance. Weeds grow in the cornfield with a luxuriance almost equal to that of the fabled "Jack's Bean Stalk," and they must be cultivated out or there will be no corn. The potato bug will quickly destroy a patch of potatoes, if they are not taken in time, and yet everyone knows that the potato bug is not an unmixed evil, for prior to his arrival potatoes were planted and left to take care of themselves, the result being that the crop was from 25 to 50 bushels an acre. When the potato bug made its appearance he forced the farmer to take better care of his potatoes and the result has been that where 50 bushels were gathered before, from 100 to 400 bushels an acre are gathered now. Fruit trees must be sprayed to prevent their destruction by scale and other insect enemies, while even the housewife finds her little asters cut off by a bug as they appear above the ground, and worms and other insects render her rosebushes unsightly bunches of sticks instead of pyramids of bloom, unless she exercises the utmost vigilance.

Water snakes will appear in a pond with an appetite that is startling. Algae will grow in the water and must occasionally be removed when it grows too thick. King fishers will appear to collect from everywhere, each armed with an appetite for fish, but two or three poles set around the pond on the top of which are placed traps will reduce the number of Kingfishers to the minimum, and the minimum can be still further reduced by the careful use of a shotgun, and the shotgun for the Kingfishers will train the boy up to be the handler of a weapon, a desirable thing, where the army is composed in case of war, almost entirely of volunteers who would be practically valueless unless they can shoot.

Herons will also be attracted to the ponds and they have a voracity which is appalling. The blue heron, after gorging himself, will take an additional number of fish and place them in rows on the bank covering them with some material. These fish disappear in time, but whether taken by the heron or something else, there is not sufficient testimony to tell. The herons are mostly night birds, and therefore not so easily seen as the Kingfishers.

Muskrats will come and dig holes in the bank, which if not watched, will result in a crevasse which will allow the water to run unexpectedly away and leave the pond a dry waste with the fish dead upon the bottom. A steel trap or two will place the muskrats in the situation of a good muskrat in that his flesh is edible and his pelt is worth now from 75 cents to a dollar each. There is a prejudice against eating muskrats which is due largely to its name, the muskrat being really a beaver and beaver's flesh is considered a delicacy. The muskrat is sold in the restaurants at Baltimore and is rated a dainty as the muskrat feeds exclusively on vegetables and carefully washes his food before he eats it. While as an enemy he is a source of trouble he can be converted into a pleasant edible and his hide into a merchantable article.

It might be said here that if some tadpoles were introduced into the pond the result will be frogs, and the fish diet may be supplemented occasionally with that of frogs, though the frogs will not thrive in very large numbers in so small a pond.

WERT
BOOKBINDING
MIDDLETOWN, PA.
JANUARY 75
We're Quality Bound